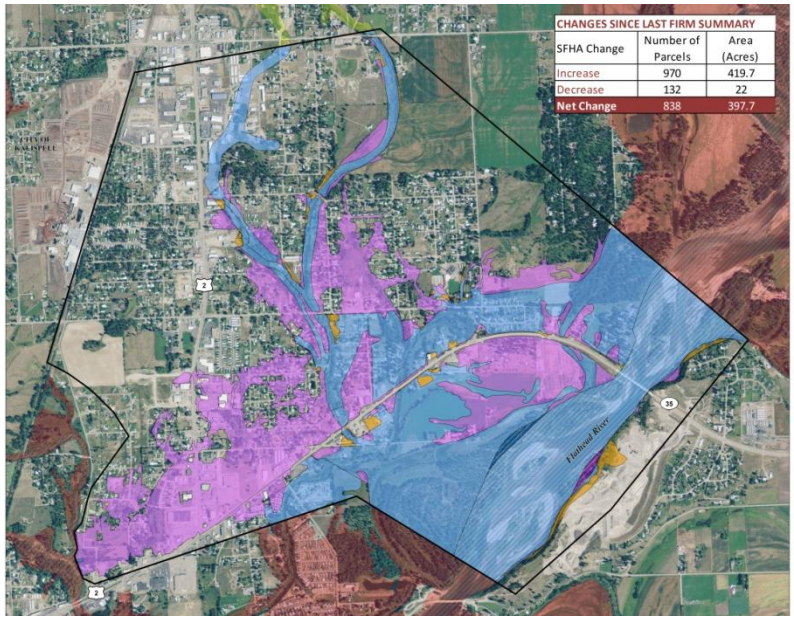
FEMA

Flathead County, MT Physical Map Revision
Evergreen Area

July 28, 2011

Overview

- **Introductions**
- **Timeline (6pm-?)**
- **Agenda**
  - NFIP Overview/Insurance
  - Project Summary/Background
  - Review of Map Changes
  - Timeline/Next steps
- **General Questions**
- **Breakout Stations**



National Flood Insurance Program

The National Flood Insurance Program (NFIP)

Federal program that provides flood insurance to participating communities in exchange for adopting and enforcing a local floodplain ordinance.

How was the NFIP established?

The U.S. Congress established the NFIP on August 1, 1968, with the passage of the National Flood Insurance Act of 1968.

How was the NFIP established?

- **The NFIP was broadened and modified with the passage of the:**
  - Flood Disaster Protection Act of 1973
    - ➢Mandatory purchase authorized
  - National Flood Insurance Reform Act of 1994
    - ➢ Flood Mitigation Assistance grant,
    - ➢Established the 30-day wait
  - Flood Insurance Reform Act of 2004
    - ➢Created rep loss, severe rep loss

NFIP Participation Requirements

Participating communities are required to adopt and enforce a floodplain management ordinance that meets or exceeds requirements specified under Title 44 of the Code of Federal Regulations (CFR) Section 60.3.

NFIP Participation Requirements

Continued eligibility is based on local enforcement of the provisions of the floodplain management ordinance.

Compliance is monitored by FEMA via a process called a Community Assistance Visit (CAV).

How the NFIP Works

There are 3 basic parts to the NFIP

Regulations

Insurance

Mapping

Flood Insurance

NFIP Definition of a Flood

- **A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or two or more properties (at least one of which is the policyholder's property) from:**
  - **the overflow of inland or tidal waters;**
  - **unusual and rapid accumulation or runoff of surface water from any source; or**
  - **mudflow; or**
- **collapse or subsidence of land along the shore of a lake or similar body of water exceeding anticipated cyclical levels that result in a flood as defined above.**

Structures “out” going “in”

- **FIRST 2 YEARS after map is effective, most structures “out” going “in” will be eligible for a Preferred Risk Policy (PRP) Extension.**
- **AFTER two years, grandfathered rates will be available.**
  - **Policy can be transferred to new policy holders.**
  - **For structures built before 09/05/1984, policies are required to be maintained without a break in coverage to remain eligible for grandfathered rates.**

Example Moderate-to-Low Risk Premiums

PRP policy		Standard policy	
Coverage	**Annual Premium**	**Coverage**	**Annual Premium**
$30,000/$12,000	$185	$35,000/$10,000	$478
$50,000/$20,000	$236	$50,000/$15,000	$673
$75,000/$30,000	$277	$75,000/$20,000	$860
$100,000/$40,000	**$304**	**$100,000/$30,000**	**$1,004**
$125,000/$50,000	$324	$125,000/$40,000	$1,102
$150,000/$60,000	$343	$150,000/$50,000	$1,201
$200,000/$80,000	$378	$200,000/$80,000	$1,489
$250,000/$100,000	$405	$250,000/$100,000	$1,636

A word about premiums…

- **Rates are standardized across nation**
- **Premium estimates should be the same between companies**
- **If premiums are different, the quotes are not "apples-to-apples"**

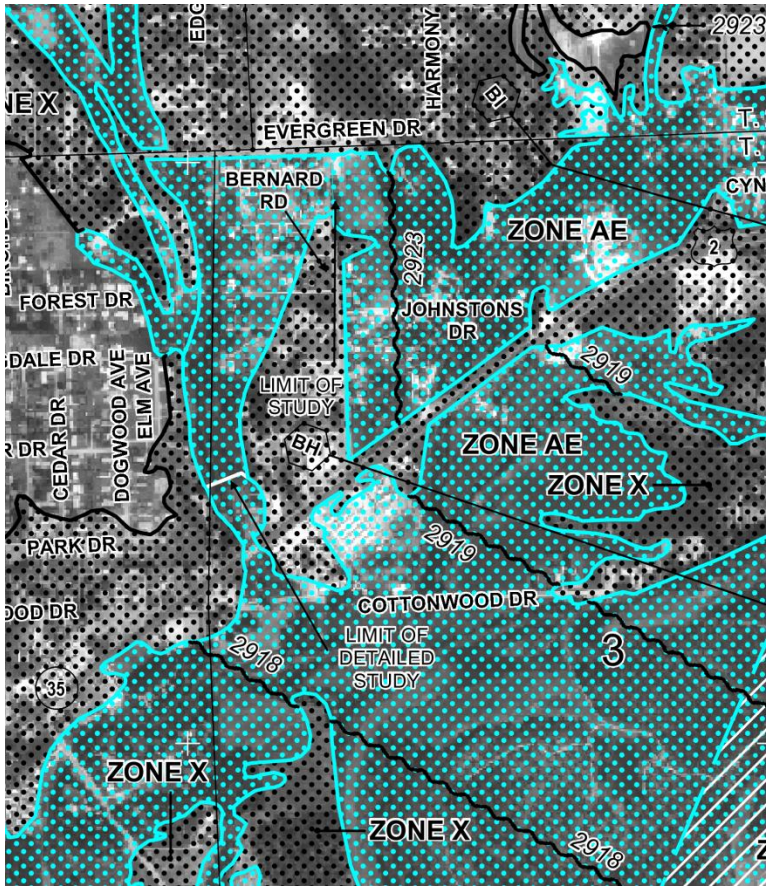
FLOODS CAN HAPPEN ANYWHERE!

- **High risk versus low risk of flooding**
- **Riverine flooding, sheet flow, localized or urban flooding, flash floods, ice jam, ditch overflow, highway/railroad or levee failure or overtopping**
- **20% of flood claims are from areas outside FEMA mapped floodplains**

Evergreen Restudy Overview

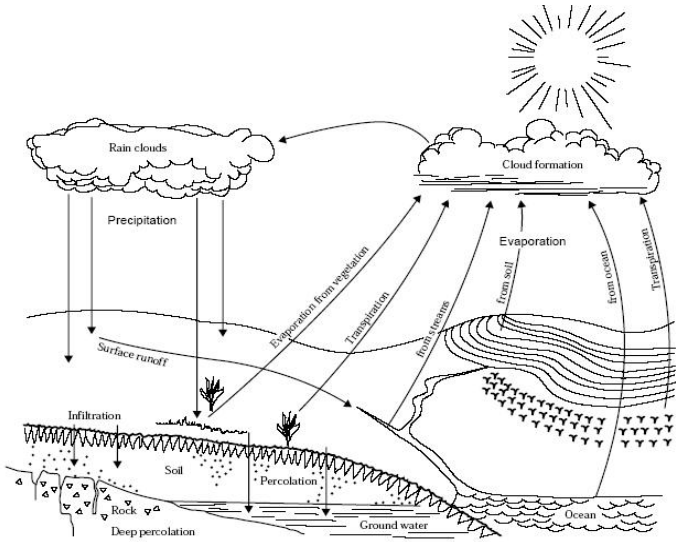
Purpose/History of Restudy

- Accurately reflect flood risk which results in action to mitigate that risk
- Inaccuracy brought to FEMA's attention
- FEMA contracted with PBS&J out of Bozeman to restudy the area
- Supplemental work performed by Baker
- Property Owner notification and Preliminary DFIRM issued

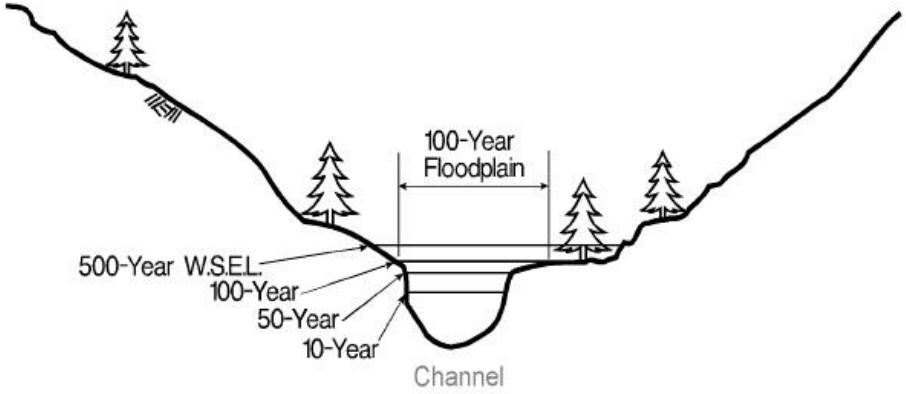


Hydrology & Hydraulics Basics

- **Hydrology**
  - study of the endless circulation of water between earth and its atmosphere



- **Hydraulics**
  - how a quantity of water will flow through a channel or floodplain



Source Data

- **LiDAR**
  - **Watershed Sciences, Inc.**
    - Flown 10/01/08
  - **3 cm vertical accuracy**
    - Based on over 4000 hard surface control points
  - **Used to create 2-ft contours**
  - **Accompanied by High Resolution Aerial Photography**

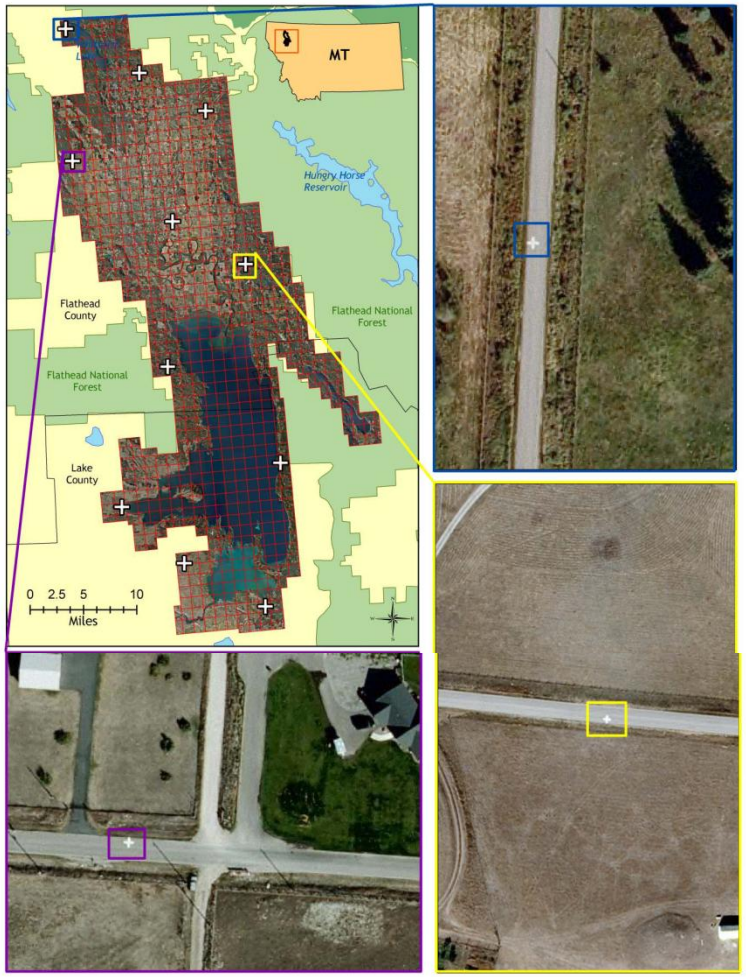
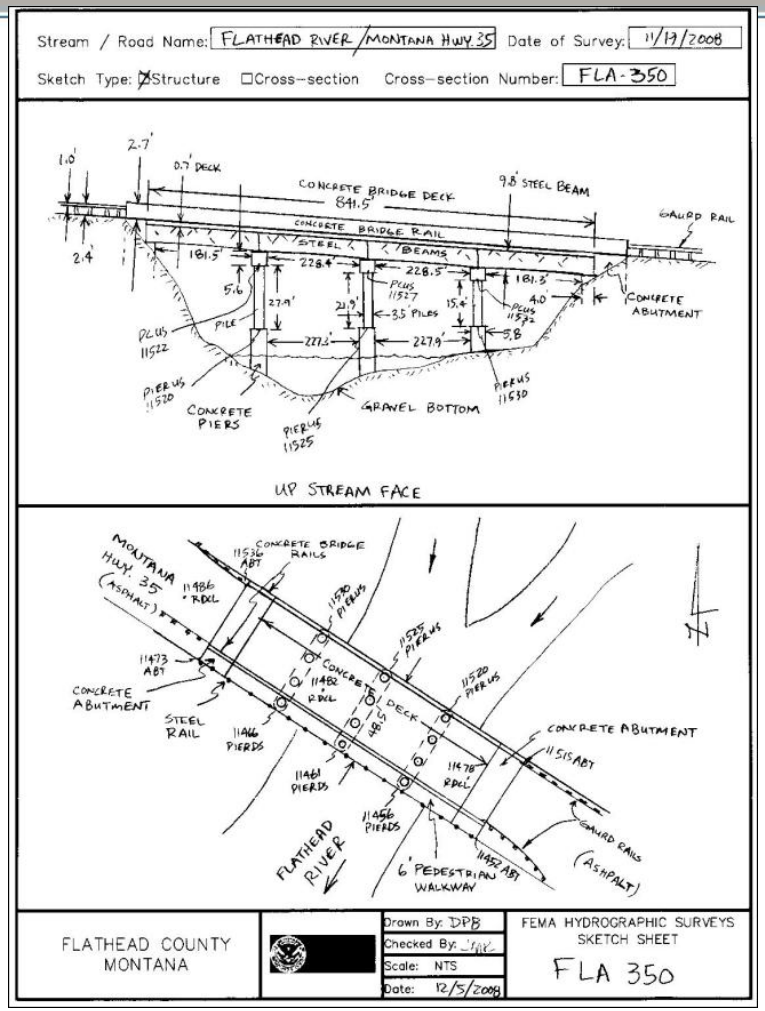


Image source: *Watershed Sciences, Inc.*

Source Data

- **Field Survey**
  - Performed Nov. ’08 by Sands Surveying, inc.
  - 14 River Cross Sections
  - 3 Bridges/Culverts
  - Bernard Road & other key features
  - Compares well with LiDAR
- **Prior Flood Studies & Historical Information**



Hydrology

- **Effective hydrology used for this restudy**
- **USACE hydrologic analysis**
  - **Gage analyses on Columbia Falls and Polson gages**
    - Unregulated (before Hungry Horse)
    - Regulated (post Hungry Horse)
  - **Regulated analysis determined to be most accurate**
  - **1964 event (and 1894) excluded because it was so severe and statistically biased (PMP)**

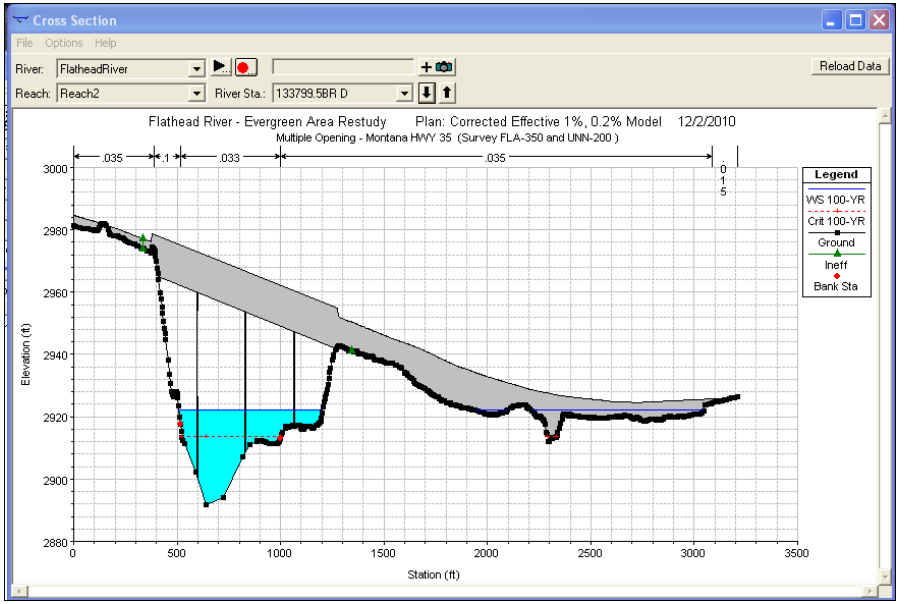
Discharges

- **FIS versus USGS update**

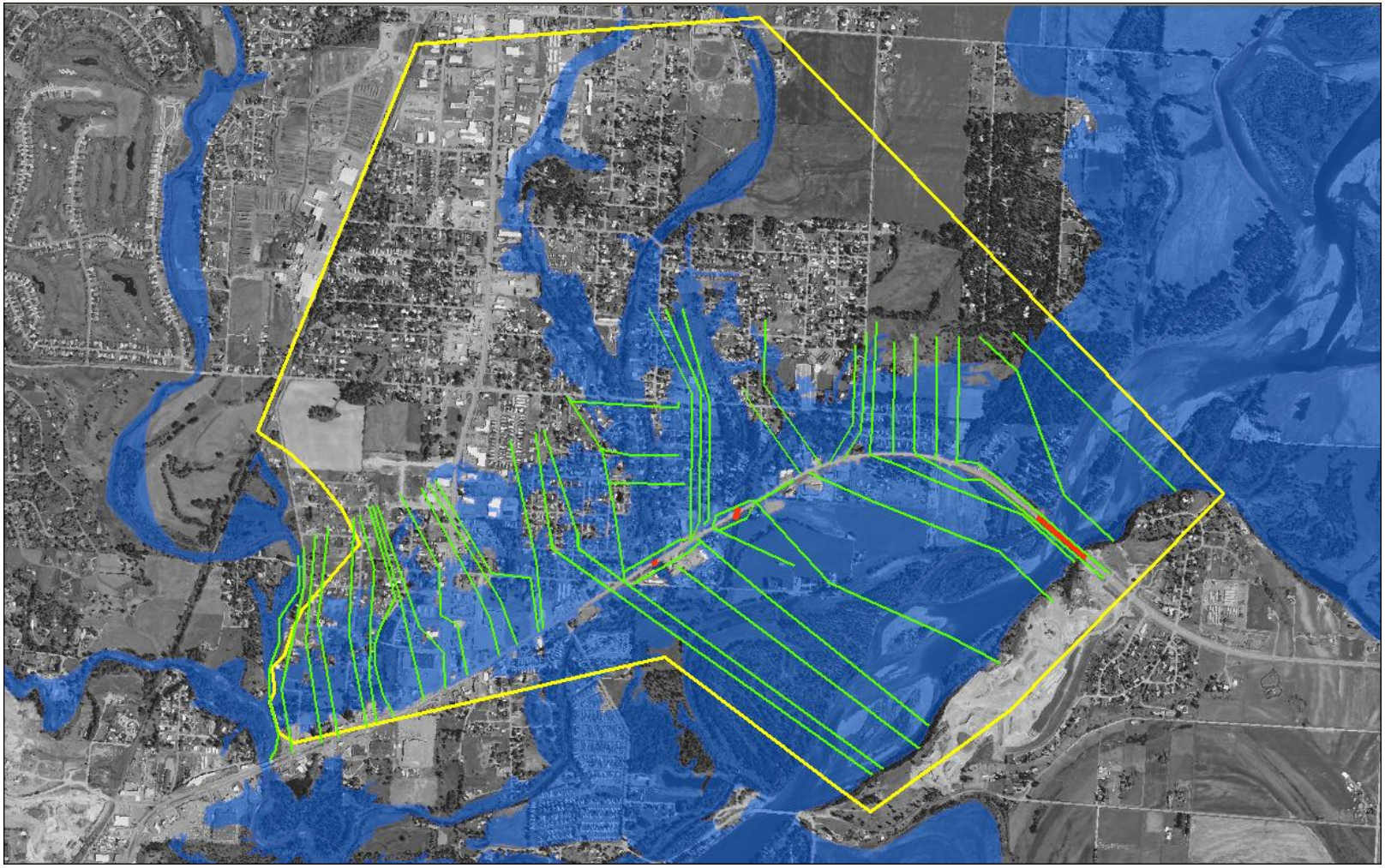
	10-yr	50-yr	100-yr	500-yr
Effective FIS	66,000	79,000	**84,500**	140,000*
USGS WRI 03-4308	63,200	71,900	**84,200**	97,800
Delta (cfs) (%)	-2,800 (-4.2%)	-7,100 (-9.0%)	**-300 (-0.4 %)**	-42,200 (-30%)
* FIS indicates USACE estimates this value to be 121,000				

Hydraulics

- **Hydraulic Model – HEC-RAS 4.1.0**
  - **Uses the updated topography and the predicted peak flood discharges to simulate the depth & velocity of floodwater at model cross sections**



Hydraulics

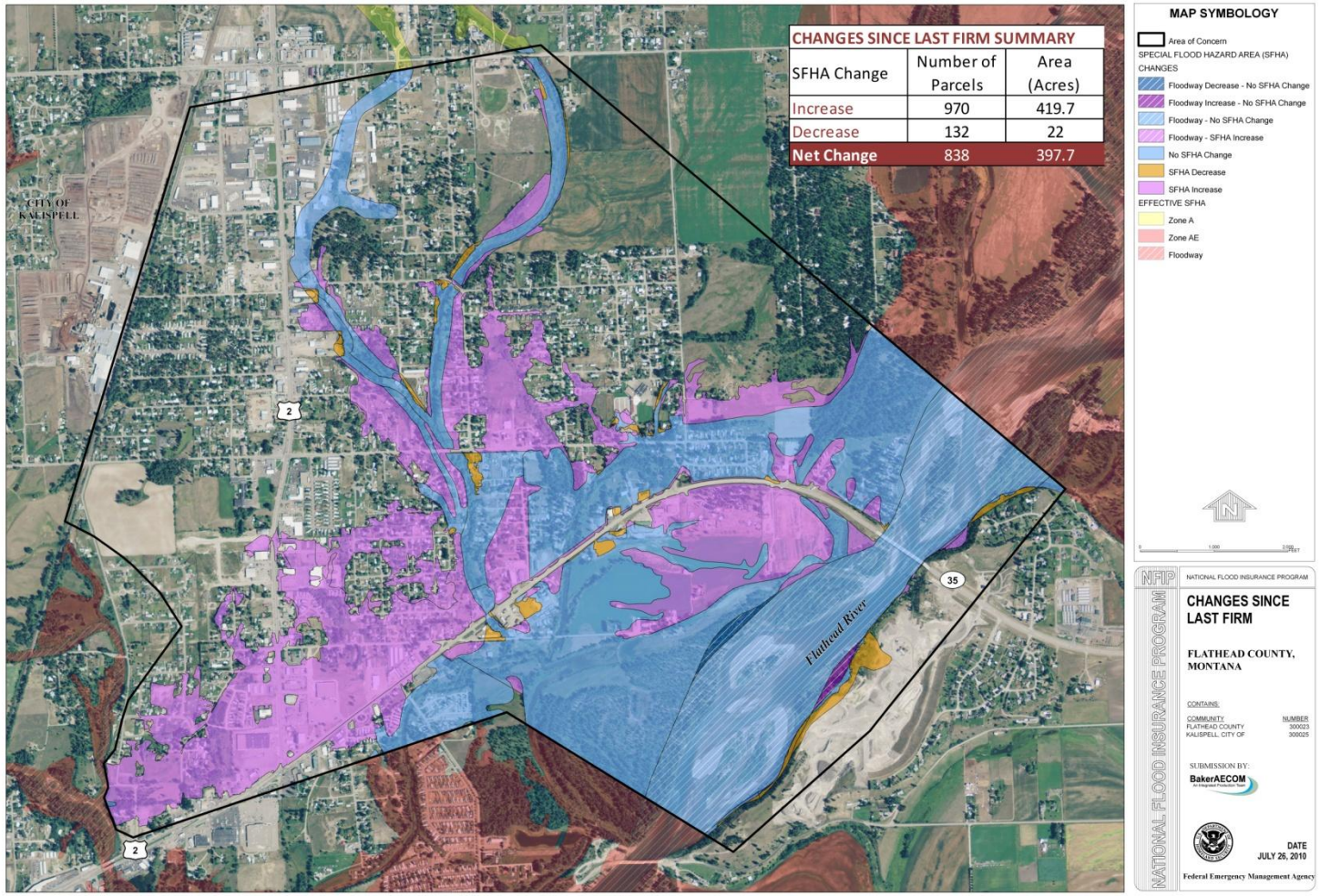


Hydraulics

- **With updated topography & survey data, base flood elevations may have increased or decreased compared to current info.**

- **Model predicts MT-35 Bridge doesn't have capacity to pass Flathead River 1% annual chance floodwater without causing water to back-up and flow in side channel towards and across Bernard Road.**
  - **Approximately 60% of overflow intercepted by Spring Creek and returned to Flathead River**
  - **Most remaining flow continues on north side of US Hwy-2 until intercepted by Stillwater River / Whitefish River and returned to Flathead River**

Changes Since Last FIRM



Mapping Process

Timeline/Next Steps

- **Post-Preliminary Steps**
  - **FIS and FIRM Issued Preliminary (6/9/11)**
    - 30-day Community Comment Period
  - **Final Meeting/Open House (7/28/11)**
    - Respond to comments from County
    - Post BFE changes in the Federal Register
    - Publish BFE changes in local newspapers
  - **Appeal Period (90-day)**
    - Resolve appeals and protests
    - Issue Letter of Final Determination (LFD)
  - **Compliance and Adoption Period (6-months)**
    - FIS and FIRM effective 6-months after LFD Date

Comments, Appeals, & Protests

- **Comments**
  - Generally corrections to non-technical information (Road Names, Corporate Limits, etc.)
- **Appeals**
  - Scientific or technical data submitted that show BFEs are incorrect (only apply to revised BFEs)
- **Protests**
  - Scientific or technical date submitted to show that other flood hazard information is incorrect (Boundary delineations, floodways, etc.)

General Questions

Breakout Stations